

MONOLITHIC ARRAY AMPLIFIER WITH PERIODIC BIAS-LINE
BYPASSING STRUCTURE AND METHOD

Abstract of the Disclosure

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A bias-line bypassing structure comprises a plurality of bias-line bypass circuits forming a periodic structure at least partially around each of a plurality of amplification units to reduce RF current flow between the amplification units and a grid-bias network. Each bias-line bypass circuit may comprise thin-film
10 capacitors, inductive wire bridges, and thin-film resistors connected to ground vias. The thin-film capacitors may have differing values selected to resonate with an associated one of the inductive wire bridges and an associated one of the thin-film resistors to shunt RF current flow over a range of RF frequencies. In some embodiments, the inductive wire bridges may comprise inductive wire-bridge
15 fuses to provide an open circuit in case an associated one the thin-film capacitors shorts to ground. The bias-line bypass circuits may be positioned along a bias street of the grid-bias network and spaced apart by less than a quarter-wavelength of an effective propagation constant of the bias line.